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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,338	02/25/2002	James Roddis	31229-178398	1368

26694 7590 05/07/2003

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EXAMINER

ZIMMER, MARC S

ART UNIT PAPER NUMBER

1712

DATE MAILED: 05/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/069,338

Applicant(s)

RODDIS, JAMES

Examiner

Marc S. Zimmer

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Information Disclosure Statement

Applicant is advised that abstracts of foreign patents are not to be reported under the heading of "Foreign Patent Documents". Rather, they should be placed under the heading, "Other References". Indeed, an abstract is merely a summary of the contents of a document as viewed by someone other than the author of the original publication and, hence, does not necessarily accurately portray the actual teachings of said publication. Further, the Examiner asks that Applicant furnish a copy of ZA 8102389 so that the applicability of this reference may be duly ascertained.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 2 and 5-7 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The meaning of the phrase "top up the glass level" is not understood. It will be assumed that claim 2 merely intends to build on claim 1 by requiring the presence of another polymer-insoluble additive. Also, each of claims 5-7 contemplates a scenario wherein the particle diameter of the glass granule component is 0 mm. Of course, this is a physical impossibility hence the claims should be amended such that the lower end of the recited range has a positive, non-zero value.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, Applicant has described the binder resin as one that is "set to bind" the granules thereby forming the claimed composite. The meaning of this phrase is unclear and, in particular it cannot be ascertained what the term "set" indicates. Is the Examiner to infer from this that the resin must be one that is thermosetting, i.e. it is chemically changed after being subjected to an environmental stimulus (usually heat)? An alternative explanation is that the resin need only be hardened thereby trapping the granules inside the polymer matrix. For instance, the granules could be mixed with a thermoplastic that is heated to its melting point. Upon cooling, the polymer sets and the granules are encapsulated therein. From the disclosure, it appears that Applicant only expressly contemplates thermoset resins. Nonetheless, the second interpretation cannot be completely discounted. For the purposes of evaluating the invention against the prior art, it has been assumed that the granules may be incorporated into thermosetting- and thermoplastic polymers alike. Nonetheless, clarification is requested.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4-7, 9-10, 16, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Hesterman et al., U.S. Patent # 5,693,413. Hesterman describes the manufacture of a moldable material that is prepared using recycled rubber and ground glass derived from recycled bottle glass (column 1, lines 57-58). Their contributions to the total weight of the composition are as follows:

- (i) 45-92 wt.% of rubber chips/strips and
- (ii) 0 to 55 wt. % of the ground glass.

Additionally, a binder selected from aromatic urethanes, aliphatic urethanes, and epoxy resins is blended with the aforementioned materials in an amount corresponding to 5 to 15 percent by weight of the composition. Concerning claims 5-7 and 9, the recycled glass is broken and ground into a particulate having a particles size distribution of 0.5 to 4 mm according to column 2, lines 37-38.

As for claim 2, based on the Examiner's earlier analysis of this claim, it is submitted that the rubber chips may be considered a bulking source.

As for claim 16, when the ground glass content is added in an amount representative of the higher end of the preferred range, ca. 45-55 wt. %, this limitation is satisfied.

The method of claim 17 is mirrored in the sample preparation process described in column 2, lines 56-63.

Claims 1, 3, 5-7, 9-12, and 14-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee et al., U.S. Patent # 3,539,533. Lee describes a dental filling composition comprising a resinous component and an inorganic filler component. The

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base material of the resinous component is the acrylic derivative of bisphenol A depicted in the lower third of column 1. To this material is added 8-15 wt. percent (column 4, lines 43-45) of a reactive diluent to increase the workability of the composition of which triethylene glycol dimethacrylate is favored (column 1, lines 59-63 and column 2, lines 66-70). The inorganic component delineated at column 3, lines 59-73 constitutes preferably greater than 70 wt.% of the composition. Glass beads having a particle size of between 2 and 85 microns (.002 and .085 mm respectively) are identified as one of the favored embodiments of the dental filler. Consistent with claim 11, Lee recommends treating the fillers mentioned therein with a keying, or coupling, agent in amount corresponding to one-half percent relative to the weight of the inorganic filler (column 4, lines 20-25) to facilitate better interaction of the filler and polymer matrix. Insofar as the filler comprises by far the largest fraction of the composition in terms of weight, the requirement of claim 15 is inherently satisfied.

As for claim 17, the preparation method described under the heading EXAMPLE is analogous to that recited in claim 17.

Claims 1, 3, 5-7, 9-11, and 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Orlowski et al., U.S. Patent # 4,220,582. Orlowski discloses a composition for repairing oral injuries comprised of a 15-70 wt. % of a liquid resin binder and 30 to 85 wt.%, more preferably 70 to 85 wt. % (column 3, lines 33-36), of a finely divided inorganic filler. Relevant to the present discussion, barium glass having an average particle size of .001 to .030 mm (column 4, lines 37-39) is identified as an essential ingredient of the inorganic component. However, because barium glass has a

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higher refractive than is ordinarily useful for dental applications and a high coefficient of thermal expansion, it is recommended that said glass be blended with amorphous silica in a ratio of 60:40 (column 3, lines 1-23) though the former may constitute 100% by weight of the filler in some instances (column 3, lines 65-67). Barium glass, as it is defined in the reference is that for which barium oxide makes up at least 22.5 % by weight of the total weight of the glass (column 2, lines 56-58).

As for claim 11, Orlowski advocates modifying the surfaces of the filler particles by treating them with an organosilane to, again, improve the miscibility between the filler and host polymer.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Orlowski et al., U.S. Patent # 4,220,582. Although Orlowski does not teach a specific amount of the keying/coupling agent, one of ordinary skill is fully capable of determining the appropriate quantity of this component as a matter of routine experimentation.

Allowable Subject Matter

Claims 8 and 13 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

In closing, the Examiner wishes to point out that the most basic incarnations of the claimed invention are so general that they are anticipated by literally dozens of patents. Indeed, Applicant requires only a polymer material and glass granules in admixture. It is to be noted for the record that, in the absence of a specific definition of the term "granules", the Examiner has taken this limitation to indicate that the glass must take a form for which the aspect ratio is low. That is, while the glass does not have to be perfectly spherical in shape, it may not be a flake, needle, or fiber.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc S. Zimmer whose telephone number is 703-605-1176. The examiner can normally be reached on Monday-Friday 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson can be reached on 703-308-2340. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

May 2, 2003



Robert Dawson
Supervisory Patent Examiner
Technology Center 1700